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A STUDY OF THE ICT PROFILE OF THE OPEN UNIVERSITY MALAYSIA LEARNERS

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Abstract

This article reports on the study undertaken to elucidate the ICT profile of the Open University Malaysia (OUM) learners. The information is imperative for the building of the learning communities and bridging the digital divide among learners separated in space and time. The aspects studied were the computer availability and Internet accessibility at home and at the workplace, the usage of standalone and Internet-linked applications and the frequency of usage. The results revealed that a high proportion of the learners have computers both at home and at the workplace with sufficiently high rates of Internet connection at the home computer but substantially lower rates for the computer at the workplace. In terms of the usage of the standalone computer applications, a substantially higher proportion of the respondents use word processing applications, followed closely by educational CD-ROM and entertainment applications. The results also revealed that slightly more than seventy-five percent of the respondents use the Internet Browser as well as the asynchronous communication application but only a few of them utilise the synchronous chat application. In terms of the frequency of usage, the majority of the respondents use the computer at home at least three times a week but considerably less frequently at the workplace. The implications of these findings in relation to the formation of online learning communities and bridging the digital divide in the delivery of open and distance learning courses will be discussed and highlighted.

Introduction

Open and distance learning (ODL) learners are a testimony to the endeavour of lifelong learning of the adult individual. Their success in the undertaking of the educational programme offered by the ODL institutions will lead to greater achievements and a better quality of life. This should also be of great benefit to developing countries in terms of human resource development and provision of a skilled labour workforce to drive the economic growth of the countries. Malaysia, a developing country herself, has only about 16 percent of its population aged 20 and above who possess any form of post-secondary, college or university education (Malaysia, 2002). The Malaysian government hopes to raise this figure to 25 percent by the year 2020 through an increased access to higher education for its population (Gan, 2001). ODL is thus becoming one of the important strategies that could be deployed to achieve this vision. The Open University Malaysia (OUM) is the first private ODL institution established in

Malaysia to fulfil the nation's aspiration to increase the access to higher education among Malaysians, especially among the working adults. Its mission statements are to be the leading contributor in the democratisation of education, to develop quality education through multimode learning technologies, and to develop and enhance learning experiences towards the development of a knowledge-based society (STAR, 2004).

ODL is a learning method by which a learner engages in some form of communication with the course manager in order to acquire new information, transform that information into knowledge, and develop skills in using that knowledge in various contexts. ODL also means that the learner and the teacher are physically separated from one another in space and time, and some media and communication tools should be deployed to bridge this separation (Bates, 1984). Various forms of communication media have been utilised to bridge the spatial and time separation between the course manager and learners. At OUM, a blended approach to learning has been deployed. This approach uses multimode communication strategies involving real and virtual interactions between learners and tutors via face-to-face interactions and an online learning environment (OUM, 2004).

The online learning environment utilises computer communication technology and Internet such as e-mail and World Wide Web (WWW) that allow learner-to-learner and learner-to-teacher interactions. While some of the communication media for ODL such as print materials, audio-cassettes and radio broadcasts offer only one-way teacher-to-learner interaction with limited uses of instructional strategies, the online learning environment through e-mail conferencing and WWW, for instance, can offer two-way or/and multiple-way communication. Various forms of instructional strategies including online discussions, online learning, problem solving and online resources can be utilised to supplement course materials (O'Donoghue et al., 2001; Chen, 1997). The online learning environment also allows collaborative learning, in which the learners are presented with opportunities to learn together. At the same time, it can excite individuals to learn by increasing access to information, making learning more intrinsically interesting and encouraging learners to become self-directed. Learners can have access to interactive materials that will tutor them in all the basic contents of a curriculum. Learners will be challenged to the limit of their abilities by a system that recognises and addresses their individual knowledge levels. The online learning environment also accommodates immediate feedback or responses from learners at remote sites and these prompt responses will enhance and facilitate their learning (Lee et al., 1997).

However, the abilities of the online learning environment as an ODL vehicle to support learner-to-learner interaction, problem solving activities and access to information resources are dependent on various variables. Volery (2001) outlined three important variables affecting the effectiveness of the online learning environment; these being technology, instructor characteristics and learner characteristics. The variables for learner characteristics – such as the availability of computers, Internet accessibility at home or at the workplace, prior computer experience and gender difference – have been found to influence learners' attitudes toward computers (Colley et al., 1994). Early exposure to computers and the Internet, and the possession of necessary basic

computer and software skills are found to greatly influence the attitude of learners toward the online delivery of courses (Volery, 2001; Bancroft et al., 2000).

It is clear that there is the need to study the technology and learner characteristics variables, which would in turn provide institutions with direct measure of their learners' readiness towards the implementation of an online learning environment. Accordingly, this study will measure OUM learners' level of readiness and their ICT profiles towards the implementation of the course delivery mechanism through the online learning environment. In doing so, the following research questions have been raised:

a. What is the level of computer availability at home and at workplace among OUM students?

b. What is the level of Internet accessibility of these computers?
c. What are the types of standalone and Internet-linked applications most frequently used?

d. What is the rate of computers usage both at home and at the workplace?

The findings will reveal the ICT profile of OUM learners and ascertain the availability of computers to them, the access of their computers to the Internet, the types of software most frequently used by them and the rate of their computer usage. This information would indirectly clarify the level of readiness among OUM learners towards the implementation of an online learning environment. It would also promote a better understanding of the extent of their requirement where computer-related learning activities are concerned. Appropriate intervention by the institution could be taken so that no learners are being marginalised in terms of online learning and other computer related learning activities. Equal access to the learning activities leads to the fulfillment of learners' needs, imperative for the satisfaction of quality within the programme offered by OUM in the quest of lifelong learning sought by adult learners.

Methodology

The questionnaire used for this study was the type that elucidated information on the ICT profile of OUM learners. Four dimensions of the ICT profile were studied, namely the level of computer availability both at home and at the workplace, Internet accessibility of these computers, the usage of standalone and the Internet-linked computer applications and the rate of computer usage both at home and at workplace. The standalone applications studied were the word processing, educational CD-ROM and entertainment applications. The Internet-linked applications studied were the e-mail, Internet browser and the Internet Relay Chat (IRC), which is a synchronous chat application. To elucidate such information, the questionnaire was designed using the type that elicited 'yes' and 'no' prompts to a given series of statements related to the dimensions studied. The analysis of data involved extracting the frequency of the given prompts using the standard statistical package.

The sample of this study consisted of OUM learners enrolled in OUM courses for the semester in 2003. A total of 147 questionnaires were returned with the gender

distribution of 44.7% males and 55.3% females. The sample consisted mainly of Malays (82.3%), followed by Indians (14.9%) and a few Chinese (1.4%). The majority of the respondents earned within the income bracket of between RM1,000 - RM2,000 (87.3%), followed by RM2,000 -RM3,000 (10.6%) while very few earned less than RM1,000 (2.1%). In terms of the age distribution, 22.7% were between 20-30 years old, 59.6% between 31-40 years old and 17.7% were in the range of 41-50 years old.

Results and Discussion

The responses relating to computer availability and Internet accessibility among OUM learners are depicted in Table 1. The level of computer availability among them is very high both at home (95.8%) as well as at the workplace (91.6%). This high level of computer availability is a reflection of the awareness among OUM learners of the importance of the computer technology usage to support learning activities in ODL. Computer based-learning in the multimedia format utilising the CD-ROM applications is dependent on the availability of computers in the homes of the learners. These findings indirectly reflect that a high percentage of OUM learners are ready and equipped with the necessary hardware for the implementation of a course delivery utilising such a format.

The level of Internet accessibility is also high at home (83.2%), but lower at the workplace (30.8%). The online learning environment in the multimedia format, utilising the interactive capability of the WWW, is dependent on the Internet accessibility of the computers. The results show that the OUM learners are ready for the implementation of online learning as far as the house-based setting is concerned, but not so in the context of the workplace. The level of computer availability and Internet connectivity among OUM learners is slightly higher than those at other Malaysian institutions offering online learning. Silong et al. (2002) reported that the average level of computer ownership and Internet connection at three other Malaysian higher distance learning institutions are 79.0% and 81.1% respectively. Significantly different perceptions exist among learners at the various institutions with respect to computer knowledge, skills and level of readiness towards online learning.

Table 1: Computer availability and Internet accessibility among OUM distance education learners at home and at the workplace

	Computer Availability				**Internet Accessibility**			
	Yes		**No**		**Yes**		**No**	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**
At Home	137	95.8	5	3.5	119	83.2	23	16.1
At Workplace	131	91.6	11	7.7	44	30.8	95	66.4

Table 2 shows the results in terms of the usage of standalone computer applications, namely, the word processing application, entertainment and educational CD-ROM application at home and at workplace. The results revealed that the word processing application recorded the highest usage (86.0% at home and 72.0% at workplace)

followed closely by the educational CD-ROM and entertainment applications. This implies that OUM learners find the word processing application to be the most useful, and are inclined to utilise it in order to fulfil their study needs in the writing and editing of assignments, the writing of reports, essays, etc.

The usage of CD-ROM applications associated with the educational purposes recorded the next highest percentage (74.8% at home and 42.7% at workplace). The use of educational CD-ROMs that contain educational materials that are either provided by the institution or readily available in the market can enhance knowledge skills by enforcing the objectives of the course curriculum. The use of CD-ROM, that allows the incorporation of animation, stimulation and graphics materials to supplement the main course content of the printed module, is one of the pedagogical approaches taken by OUM that makes learning interesting and more effective (STAR, 2004). The high percentage recorded provides a two-fold indication; first is the general awareness of OUM learners regarding the importance and usefulness of this application and second, students' utilisation of the application to their benefit in the course of their studies.

Table 2 also shows that many OUM learners use the entertainment application at home (69.2%) and to a much lesser extent, at workplace (23.1%). This indicates that the OUM learners also extend computer usage to non-academic activities such as watching movies, listening to music and playing computer games. This level of usage is quite high at home indicating a high level of usage of computers for general entertainment purposes and pursuits of personal interest.

Table 2: The usage of the standalone applications among OUM learners at home and at the workplace

	Word Processing				**Entertainment**				**Educational CD**			
	Yes		**No**		**Yes**		**No**		**Yes**		**No**	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
At Home	123	86.0	10	7.0	99	69.2	25	17.5	107	74.8	23	16.1
At Workplace	103	72.0	28	19.6	33	23.1	75	52.4	61	42.7	58	40.6

Table 3 shows the results of the usages of Internet-linked applications among OUM learners. As can been seen, a moderate level of usage was recorded using the home computer as compared to the usage of these applications at workplace, which recorded a considerably lower rate of usage. This is consistent with the higher level of Internet accessibility of home computers as compared to the workplace computers as depicted in Table 1. Table 3 also shows a moderate level of usage of the e-mail application using the home computer (69.9%), followed closely by the Internet browser (63.6%) and a low level of usage of the IRC chat application (30.8%). The moderate level of the e-mail application provides a general indication of the moderate level of awareness among OUM learners of the importance of this application, which is the easy facilitation of communication with lecturers and peers. This communicative dimension paves the way

for human interaction that would help in the facilitation of the course contents. At the same time, these communicative processes help the learners to reduce their sense of isolation and enable them to establish a strong identity with the university culture while acknowledging their role as learners. This is especially true for female learners who spend most of their time at home (Hipp, 1997).

The moderate level of Internet browser usage also suggests a moderate participatory level in the usage of Internet among OUM learners to gain access to additional knowledge to supplement the course materials. The moderate level of the Internet usage is also partly due to the format of the course delivery at the time this research was being conducted. The use of the Internet was only made optional and was not formally integrated into the learning and management processes. It was used on an individual basis to gain additional information to supplement the print-based study materials. The integrated online learning environment made possible by the OUM Learning Management System (OUM LMS) was only positioned in January 2004, enabling all the learning management procedures such as course registration, dissemination of course information and examination details, counselling and general inquiries to be made online. At the same time, all the learning processes such as the uploading and downloading of course activities, asynchronous forums and synchronous chats with tutors and peer could be made through the LMS (OUM, 2004). With the introduction of LMS and the current need to use it, a higher participatory level of the Internet application is envisaged.

The low level of usage of the synchronous IRC chat application is expected. Again, this is partly due to the unavailability of a formal and organised course-based synchronous chat application in the university web page at the time this research was in progress. The new LMS that has been introduced has the synchronous chat application incorporated into each of the courses registered by the learners. With such a feature, it is anticipated that a high level of the synchronous chat application will be utilised by the learners.

Table 3: The Usage of the Internet-linked Applications among OUM Learners at Home and at the Workplace

	E-mail				**Internet Browser**				**IRC Chat**			
	Yes		**No**		**Yes**		**No**		**Yes**		**No**	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**No**	**%**
At Home	100	69.9	27	18.9	91	63.6	30	21.0	44	30.8	61	42.7
At Workplace	22	15.4	84	58.7	20	14.0	85	59.4	9	6.3	88	61.5

Table 4 depicts the frequency of computers usage among OUM learners home and at workplace. As the data suggest, the frequency of computer usage among these learners is high with 73.5% utilising the computer at the rate of more than three times a week. This high level of computer usage is an indication of the high level of ICT inculcation

among OUM learners. It also suggests that the learners possess the necessary exposure as well as positive attitude towards the implementation of a fully integrated online learning environment as an educational delivery tool.

It is also noted that even though there is a high level of computer availability of computers at workplace (91.6%) as shown in Table 1, the rate of usage is considerably lower at only 39.9% for the rate of usage of more than three times a week. One plausible explanation for this scenario can be related to the nature of their jobs. The majority of the OUM learners are school teachers and even though the computers are available in most schools, they are not widely used for teaching and learning processes. Hence the computer is not being used as often as it could be and should be at their workplace.

Table 4: Frequency of usage of computers among OUM adult distance education learners at home and at the workplace

	Everyday		**3 times a week**		**Once a week**		**< once a week**	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**
At Home	55	38.5	50	35.0	21	14.7	14	9.8
At Workplace	34	23.8	23	16.1	29	20.3	55	38.5

Summary

Our investigation reveals a high level of availability of computers among the OUM learners with a substantially high level of accessibility to the Internet connection of the home computers but not so for the computers at the workplace. In terms of the usage of computer applications, word processing is the most widely used, followed closely by the educational CD-ROM, entertainment, e-mail and Internet browser applications. The synchronous chat application recorded the lowest level of usage. The rate of usage of computers more than three times a week is high with the home computers but low with the workplace computers. All these results indicate that OUM learners have access and sufficient exposure to a computer or a computing facility, and possess the degree of inherent post-digital literacy in terms of software skills that are imperative in computer-based pedagogy, especially in terms of the effectiveness of online learning and fulfilment of the quest for lifelong learning.

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